Its whole structure had undergone a change; for the space of seven or eight inches it resembled gristle in texture and appearance. In many parts it approached nearer to the substance of bone, as it resisted the edge of the knife. As it reached within two or three inches of the sphincter ani, the canal was contracted to the size of a finger ring, resembling a circle of bone, and not admitting the little finger to pass entirely through it with all the force that I could exert. Through this ring the adventitious membrane escaped.

Before I dissected out the rectum, I introduced a large metallic bougie from above downwards, so as to verify my views as to the membrane spoken of in the history of the case. It was carried before the instrument without the sphincter ani. I investigated this pouch minutely, and could discover no opening into it by which the fæces could have escaped. During the lifetime of the patient I could always reach it with my finger introduced into the bowel, being pushed down in the form of a valve from the accumulation above it.

The parts have been preserved.

Columbia, S. C. June 4, 1828.

Art. XI. *On the Utility of Prussiate of Iron in the treatment of Intermittent Fever.* By Samuel Jackson, M. D. of Northumberland.

About eighteen months ago we had several cases of chronic pulmonary inflammation, attended with frequent attacks of intermittent fever, in which, as the bark was inadmissible, we determined to try the prussiate of iron. In these cases it often prevented the paroxysms for one, two, or three weeks, and in this respect it was precisely on a footing with bark; but it was a far safer medicine, for it never, as we believe, aggravated the inflammation; and hence, by checking the fever, it afforded a fair opportunity for bleeding away the visceral disease.

The time, however, soon arrived which was to afford the most ample opportunities of experimenting in the recent fever, and such was our success with this medicine in the first eight or ten cases, that we became quite enthusiastic in our estimation of the remedy. But further experience showed that though it was the most certain of all the substitutes for, it was far from being of equal power with the bark. Dr. Zollickoffer, to whom we are indebted for its introduction as a remedy for intermittent fever, says that in preventing the paroxysm, "it is more certain, prompt, and effectual than the justly celebrated cinchona," and that "a patient treated with this article will recover from the influence of intermittent and remittent fevers in the generality of cases in much less time than is usual in cases treated with bark." This is truly a high commendation, but unless the doctor prescribed bark of an inferior quality, we cannot conceive how he could rate the prussiate or any thing else as more prompt and effectual. We know nothing more certain, more undeviating in its operation than bark, when properly administered; nay, we are emboldened to say from an experience of some thousand cases, that it will never fail when used with prudence. We do not pretend that it will cure every case in every state of the body. Intermittents are often attended with such inflammation or lesions, that a long, patient routine of preparation is necessary, and in many cases nothing but mercury, or time, or death, can cure; but these are clearly not to be taken into the account. Bark is not a medicine of regeneration—it cannot reintegrate the liver, the lungs, or any other disorganized part; but take ten thousand patients in recent mild intermittents, who were previously healthy, prepare the system properly, administer an ounce of bark, or twelve grains of quinine in proper portions during the interval, and we boldly assert that it will cure every case, and restore the patient for a time to perfect health. We do not say that our own experience has been so fortunate, but whenever unsuccessful, the fault was not in the bark. Patients are sometimes a little unobservant of our prescriptions; often they do not comprehend, and not unfrequently the physician is deceived in the state of the system, or in his haste to cure, he prescribes the bark too soon.

We are aware that the Peruvian antidote has fallen a little in public estimation since the promulgation of the doctrines of Broussais; but perhaps the time is not far distant, when the experience and accumulated wisdom of many generations will obtain their just regard. The most truly useful, the most clearly beneficent of all the gifts of heaven, are those which have been the most abused, and the cinchona happens to be one of the number. As an example of what we consider an abuse of the remedy, we may refer to the case of Etienne, Vol. I. p. 436, of this Journal.

We have thus stepped aside from the first proposition, in order to express our good opinion of the bark, that the reader may the more justly appreciate what we have to say concerning the medicine in question.

If the prussiate of iron is equal to the bark, it has not proved so in our hands. We have used it in not less than two hundred cases, which were altogether favourable for the immediate extinction of the disease by cinchona, but it failed, as we presume, in every fifth or sixth instance. It is true, that in most of the cases in which it failed on the first trial, it proved successful in the second, third, or fourth interval immediately following; nor do we recollect any case in which the disease did not finally yield to this continued use of the medicine; but in all those instances we should have confidently expected to cure in one interval by the superior virtues of bark or quinine. As to relapses or recontractions of the disease, we believe they occurred about as soon and as frequently as they did after cures performed by cinchona. Dr. Z. says that patients "will recover from the influence of intermittent and remittent fevers, in much less time than is usual in cases treated with bark." By this we presume he means, that the final extinction of the disease is sooner attained. This we have not found to be the case. The medicine does not, like the bark, directly improve the appetite, and strengthen the enfeebled body; all that it does is to check the fever, and leave the system to its own recuperative powers. This we have reason to be assured of, for we have given it in smaller doses every second day, as a preventive, without any of that wonderful corroboration which so certainly follows the use of bark.

But here it is necessary to regard two points, on which experiments are limited, and knowledge therefore uncertain—the doses of the medicine, and the states of the system in which it may be given with the greatest success. It is possible that when these are ascertained, the prussiate may prove a more certain medicine than it has hitherto been.

First, then, with respect to the states of the system in which it is best administered. We have presumed that the body ought to be prepared precisely as for the bark, and that the medicine ought to be given during the interval. We have preferred giving the bark at least twelve hours if possible in quotidians, and twenty-four hours in tertians, before the time of accession, and the same rule we have observed in the use of the prussiate. Dr. Z. does not inform us in his paper whether he confined the use of it to the apyrexia, but Dr. CHAPMAN, Therapeutics, 5th edit., tells us that he did not; and Dr. HOSACK, app. to THOMAS's Practice, 8th edit., says it has this advantage, "that it may be given in every stage of intermittents." It is possible that it may be even more effectual when given in the paroxysm, and this is one point to which practitioners ought to direct their attention. We have never used it thus in a single instance, but in quotidians we have directed it to be commenced with, as we often do the bark, in the decline of the sweating stage, in order that it might have more time to impress the system. Further experience may reveal something more certain and useful in this particular. It was reserved for the last year to show that bleeding may be used with advantage in the cold stage of *some* cases, and therefore we need hardly despair of learning something further concerning the most advantageous administration of the new medicine.

In the second place, much of the reputation of the prussiate will depend on the doses and the quantity administered. Dr. Z.'s medium dose appears to have been six grains, two or three times a-day. Dr. Chapman, Therapeutics, 1827, does not appear to have experimented much on the subject himself, but says that Dr. WORTHINGTON, a respectable physician of Washington city, gives it in scruple doses. We began with the quantum of sixty grains, to be given during the interval, and this was uniformly successful in the first eight or ten cases; as soon as this was found to fail, we gave it with more freedom, and as it lay easy on the stomach, we gradually increased the dose so as to give two drachms during the interval. After having checked the disease, we have given from twenty to forty grains every second day for a fortnight, as a preventive, and this without any present or subsequent evil.

The proper dose, therefore, of this medicine, does not appear to be yet ascertained. Modern physiologists are surprised to discover how even SYDENHAM trifled with the bark, and our successors may find the same reason to complain of our sparing use of the prussiate. We did not go beyond the doses mentioned, because they were pretty generally successful, at least in the second or third interval, and we did not wish to be profuse in the use of a new medicine, till we should have time to observe whether it might secretly lay the foundation of future mischief. The time may come, when an ounce given during the interval, shall be found as successful as the same quantity of bark; but such doses of this compound are not to be hastily ventured upon, merely because they may produce no present distress. Like arsenic and lead, it may possibly subject the system to many future evils; but we have thus far observed no mischief whatever to result from it in any of our patients.

This medicine appears to have five advantages over bark. 1. It can be given when inflammation is present, without sensibly aggravating it. 2. It is less likely to do harm when taken without medical advice. 3. It may be given in the advanced stage of remittent fevers, when we are yet doubtful of the propriety of bark. 4. It may be useful in persons whose idiosyncrasies would seem to rebel against bark. 5. It is a much less expensive remedy.

The *first* advantage, that it can be given without detriment when inflammation exists, is alone sufficient to entitle it to our warmest recommendation. We do not mean that a patient with strong, hard pulse, and strength not broken down, is to be forthwith treated with this medicine—far from it; he must be prepared in every respect as for the use of bark, by bleeding, purging, spontaneous diaphoresis. But every one knows that in his course of treating autumnal fevers, many cases occur attended with slow inflammation; that in many of these, the cause and the effects aggravate each other, and give rise to ulterior mischief; that very often he can neither bleed away the inflammation entirely, nor yet give bark with safety to cure the fever. It is not here necessary to particularise such cases. But hold—we do not mean that bark cannot be given with safety, when some little phlogosis exists; we know the contrary—but we know too that it is a perilous practice, and that it causes and aggravates those internal inflammations, of which Baglivi makes such piteous complaints, and which he attributed with some justice to the use of bark. We do not pretend that the fever cannot often be cured by cinchona, and the inflammation by its appropriate remedies; but surely if there is a medicine that is capable of arresting the fever without aggravating the internal mischief, there is one most important indication attained. It has often happened in our practice, that a common pleurisy was not half subdued, till an ague supervened to embarrass all our proceedings, and the unfortunate patient has been obliged to struggle with the disease, now aggravated either by quinine, or by a daily paroxysm of intermittent fever.

But there is a combination of diseases of more frequent occurrence to be found in countries subject to autumnal fevers; the lungs and liver are left in a state of slow inflammation, and the patient at the same time labours under an habitual ague. This is truly a deplorable state of things, and one in which the physician will often be assisted by the peculiar virtues of the prussiate of iron.

The *second* advantage to be noticed is, that it must always prove a safer medicine in domestic use and in the hands of ignorance. We are aware that bark is often used by the unlearned in medicine with entire safety, but sad experience has taught every physician how prone many families are to tamper with active medicines, to the irreparable injury of their health. It is thus too common among those who are more economical than prudent, to puke, purge, sweat, and then take bark, however often they fail, and whatever mischief they do. If it leave a pain in the limbs and head, with slow fever, restless nights, and all that train of evils with which patients walk about all day in distress, and lie down at night in despair; all which a physician could remedy in a few days; if it finally leave a slow inflammation in the liver, the lungs, the bowels, or the head, and the sordid devotee of economy sink into debility and visceral lesions, never to know health again, let not the bark be blamed for any part of this mischief. As well might you endeavour to discredit the properties of the fire that has burned down your house, or of the water that has drowned your family.

The *third* advantage abovementioned is, that it may be sometimes given in the advanced stage of remittent fever, while bark is still, at least in our climate, a very doubtful remedy. In the treatment of remittents we have always been governed by the principle, that bark was not admissible till a decided intermission was attained. The actual existence of this is sometimes very uncertain, and in such cases we have given the prussiate with the effect of securing the patient from any subsequent exacerbation, and thus had him ready for bark on the following day. It sometimes happens that this is really a matter of vital importance, as the patient may become so worn down by the continuance of fever, as to be brought into imminent danger from every successive paroxysm. Whether the new medicine would prove salutary in slow typhus, which is apt to remit a little during the fore part of the day, we have not ascertained; but we certainly anticipate much benefit from it in such cases, and shall make the experiment in the very first that present.

The *fourth* advantage is, that it may be given to persons whose idiosyncrasies, whether natural or acquired, would seem to abhor the operation of bark in all its preparations. We know one lady who cannot take the cinchona in any form without puking, and even quinine pills would not lie on her stomach, though given with every care and without her knowing that they were extracted from bark. A gentleman of this town cannot take a sufficient quantity of bark to cure an ague, without suffering the most ungovernable restlessness, and a certain inexpressible distress of the nervous and cerebral systems; nor can he take a fourth of a grain of quinine every two hours, without having his teeth on edge with the acid—a fact almost incredible. To such patients as the above, it is probable that prussiate of iron might prove a medicine of great value.

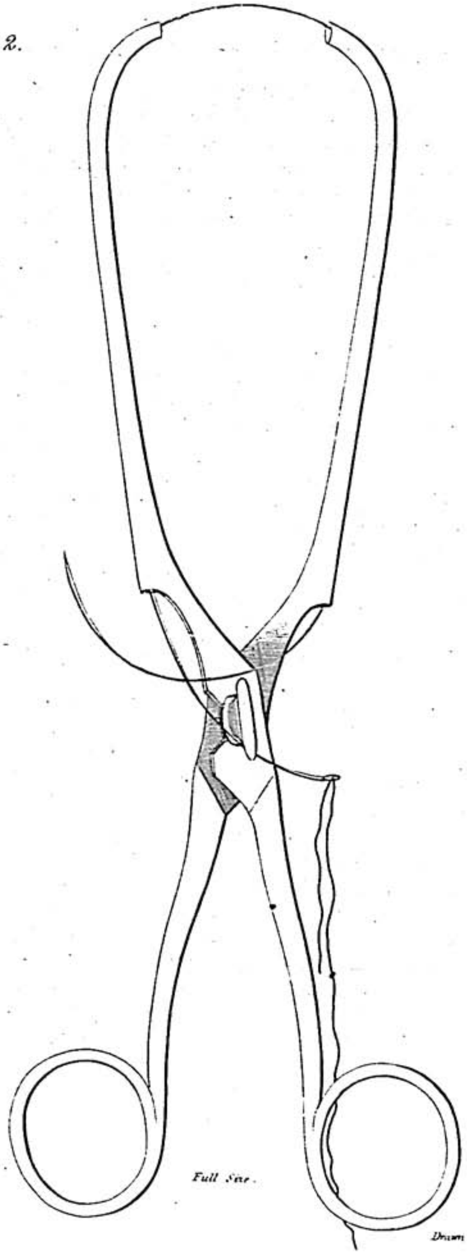
From what little we have read and observed concerning this medicine, we shall venture to call it a specific, however unpopular the epithet. One potent argument in favour of its efficacy is this:—it often produces symptoms of intoxication, with all those distressing affections of the head, obtuseness of seeing and hearing, with ringing in the ears, which so often follow the use of quinine. It must here be observed, however, that this observation was confined to one single season. Whether these affections are more troublesome in some years than others, we have not learned; but this we are assured of, that in our practice we never heard of *mere bark* producing them till last summer. In 1823 we took strong bark daily as a prophylactic for five months, generally from four drachms to an ounce every day, and not unfrequently half an ounce at one draught, yet no cerebral distress, nor any other evil followed; we enjoyed uninterrupted health and unusual vigour through the whole period, notwithstanding an accumulation of labour, upon which we have often reflected with astonishment; but last summer a single drachm a day brought on so much tinnitus as to confuse the mind, and compel us to abandon it. Many others made the same complaint of the bark, though they had taken it in former years without any of this uncomfortable affection. Quinine has always proved more or less troublesome in this way, but last summer it was particularly distressing, let the parcel from which we prescribed come from where it might. We had no other proof that the iron affected the head or stomach more than in former years.

It is said above that we believe the prussiate to be the most certain medicine after bark in the cure of intermittent fevers. It is true we have not been very industrious with some of our own country remedies. Two or three species of *Cornus* are certainly useful, and particularly if the bark be taken from the root; we have often used them with success when the system appeared to have become through frequent repetition insensible to the specific operation of cinchona. But as leading articles in practice, we have generally found all remedies from our own forests to prove more troublesome than useful, and have therefore seldom employed them till others failed. Arsenic is certainly a medicine of some efficacy, but it is slower in its operation than the prussiate. It destroys the appetite, leaves the patient in a debilitated state, and as it has often done much secret mischief, and withal, is not necessary, we humbly presume that it ought to be abandoned as a primary remedy. In chronic cases, however, we have used Fowler's solution after wholesome medicines had failed; it generally poisoned the disease sooner than the patient, and thus effected more lasting cures than any other medicines. The *extract of pepper*, as noticed in Vol. I. p. 115 of this Journal, we have used with thrice the freedom that is there recommended, and yet it required two, three, and four intervals to effect a temporary cure. It ought never to be taken without the advice of a physician. An only daughter of a highly respectable man took pepper tea just before the time of accession, and a cerebritis immediately ensued which carried her off the following day: a fact highly favourable to *physiological* medicine, and which may often occur in the use of pepper, or its extract, if inflammation exist in the brain or stomach. The *piperine* is far less pungent than the extract, and yet more successful—a fact which goes to show that there is really some specific virtue in the medicine, and that it cures, independent of its heating properties. We have lately used it in four chronic cases with complete success. In these we gave eighteen grains during the last ten hours of the interval, without any mitigation of the paroxysm; but the same treatment and dose in the next interval proved successful. In either case it was very certain that ten grains of quinine would have performed the cure at once. However this may be, the piperine promises to be a most useful succedaneum to the bark in many cases and states of the system, and it ought to be received at once among the *experienda* of every physician.—See Vol. I. p. 110 of this Journal.

If it be inquired why we made such free use of the prussiate, a medicine which was found to be inferior to the bark, we answer that it is always desirable to ascertain the virtues of every new agent; that finding it so very successful in the first few cases, and at the same time so much neglected by writers, we determined to bring it once more before the medical public. This we have done one year sooner than was intended, and of course our observations are not as precise and philosophical as they ought to be. This default, it is hoped, will soon be remedied by the care of more competent observers. Let them try the medicine freely, and publish their experience—a variety of practice, and a collision of opinions will finally establish its real uses and value; let them not be discouraged by hearing of its various virtues and improbable cures in other diseases—there is no medicine which is not abused on its first introduction into practice. We have used four pounds of it within the last year, and still use it with increasing confidence. Dr. THACHER tells us that it was employed in the New York Hospital "with little success;" but as it is possible that the house might have been furnished with some of a bad quality, and as mistakes may easily be made in this respect, we shall conclude with Dr. ZOLLICKOFFER's directions for choosing it. "Care must be taken to select that which is of a very dark blue approaching to black, having a shining coppery fracture and adhering firmly to the tongue." The inferior variety is of a lighter blue—we have not used it in a single case, and are of course unacquainted with its comparative value.

We cannot conclude without congratulating the reader on the rapid progress of science, and the happy results which are therefore auspi-

Plate 5. Vol. 2.



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